SPOOR AND FISHER

REPUBLIC OF SOUTH AFRICA
REVENUE
19.11.98
R 266,00
HASR 505
INKOMSTE
REPUBLIEK VAN SUID AFRIKA

FORM P.1

REPUBLIC OF SOUTH AFRICA
PATENTS ACT, 1978

APPLICATION FOR A PATENT

AND ACKNOWLEDGEMENT OF RECEIPT
(Section 30 (1) – Regulation 22)

The granting of a patent is hereby requested by the undermentioned applicant on the basis of the present application filed in duplicate

OFFICIAL APPLICATION NO.			S AND F REFERENCE
21	01	9810579	JP/V 672

FULL NAME(S) OF APPLICANT(S)

71	VAN LEER SOUTH AFRICA (PROPRIETARY) LIMITED

ADDRESS(ES) OF APPLICANT(S)

	INDUSTRY ROAD, NEW ERA, SOUTH AFRICA

TITLE OF INVENTION

54	MOULD INSERTS FOR FORM-FILL-SEAL PACKAGING MACHINES

THE APPLICANT CLAIMS PRIORITY AS SET OUT ON THE ACCOMPANYING FORM P.2 THE EARLIEST PRIORITY CLAIM IS:

COUNTRY:	NUMBER:	DATE:
ZA	97/7750	28.08.97

THIS APPLICATION IS FOR A PATENT OF ADDITION TO PATENT APPLICATION NO.

21	01	

THIS APPLICATION IS A FRESH APPLICATION IN TERMS OF SECTION 37 AND IS BASED ON APPLICATION NO.

21	01	

THIS APPLICATION IS ACCOMPANIED BY:

- ☒ 1. Two copies of a complete specification of 8 pages.
- ☒ 2. Drawings of 1 sheet.
- ☒ 3. Publication particulars and abstract (Form P.8 in duplicate).
- ☒ 4. A copy of Figure 1 of the drawings (if any) for the abstract.
- ☐ 5. An assignment of invention.
- ☐ 6. Certified priority document(s) .
- ☐ 7. Translation of the priority document(s).
- ☐ 8. An assignment of priority rights.
- ☒ 9. A copy of the Form P.2 and the specification of S.A. Patent Application No. 97/7750
- ☐ 10. A declaration and power of attorney on Form P.3.
- ☐ 11. Request for ante-dating on Form P.4.
- ☐ 12. Request for classification on Form P.9.
- ☐ 13.

74 ADDRESS FOR SERVICE: SPOOR AND FISHER, SANDTON

Dated: 19 November 1998

SPOOR AND FISHER
PATENT ATTORNEYS FOR THE APPLICANT(S)

REGISTRAR OF PATENTS, DESIGNS, TRADE MARKS AND COPYRIGHT
RECEIVED
1998 -11- 19
REGISTRATEUR VAN PATENTE, MODELLE, HANDELSMERKE EN OUTEURSREG
REGISTRAR OF PATENTS

SPOOR AND FISHER

FORM P.7
(To be lodged in duplicate)

REPUBLIC OF SOUTH AFRICA
PATENTS ACT, 1978

COMPLETE SPECIFICATION

(Section 30(1) – Regulation 28)

OFFICIAL APPLICATION NO.		LODGING DATE	
21	01 9810579	22	19.11.98

INTERNATIONAL CLASSIFICATION

51	B65B

FULL NAME(S) OF APPLICANT(S)

71	VAN LEER SOUTH AFRICA (PROPRIETARY) LIMITED

FULL NAME(S) OF INVENTOR(S)

72	JOHN HAWES

TITLE OF INVENTION

54	MOULD INSERTS FOR FORM-FILL-SEAL PACKAGING MACHINES

BACKGROUND TO THE INVENTION

THIS invention relates to a mould insert for a form-fill-seal packaging machine.

Throughout this specification the phrase "form-fill-seal packaging machine" refers to a packaging machine in which packaging film is drawn into a mould cavity, typically under vacuum, so as to form a pocket. The material to be packed is then introduced into the pocket and a second film secured over the pocket to close and seal the pocket.

Conventionally, a form-fill-seal packaging machine is provided with a number of mould blocks, the size of the mould cavity of each mould block determining the volumetric capacity of the pocket formed in that block. If a smaller pocket is required dividers are inserted into the mould cavity, alternatively, a second mould block is used. The first option is generally followed due to the prohibitive cost of having a second set of mould blocks manufactured.

A problem which exists with the use of dividers in a mould block is that the dividers generally result in at least some of the pockets formed within the mould block having creased or folded corners where the packaging film has not been drawn evenly in the corners of the mould cavity. This creasing and folding can result in the pocket leaking once sealed which in turn results in the pocket and its contents having to be discarded.

SUMMARY OF THE INVENTION

According to the invention there is provided a mould insert for a form-fill-seal packaging machine, the mould insert comprising:

a body having a shape and configuration adapted to be received in a snug fit into a mould block of the form-fill-seal packaging machine;

a mould cavity defined with the body; and

vacuum passages leading through the body of the mould insert between the mould cavity and an exterior face of the body.

The body may be sized to be received into the mould block of the form-fill-seal packaging machine together with at least one other similar mould insert.

Typically, the mould cavity is defined between end faces, side walls and a base within the body.

The base may be locatable in a plurality of positions so as to allow the depth of the mould to be adjusted.

Preferably, the side walls and end faces of the mould cavity are contoured into the base defining fillet radii in the corners of the mould cavity.

The vacuum passages are typically provided in the fillet radii of the mould insert.

Typically, the mould insert has a generally rectangular shape.

An embodiment of the invention is described in detail in the following passages of the specification which refer to the accompanying drawings. The drawings, however, are merely illustrative of how the invention might be put into effect, so that the specific form and arrangement of the features shown is not to be understood as limiting on the invention.

BRIEF DESCRIPTION OF THE ACCOMPANYING DRAWINGS

Figure 1 is a perspective view of a mould insert according to the invention;

Figure 2 is a cross-sectional side view along line II-II of Figure 1;

Figure 3 is a plan view of the mould insert depicted in Figure 1; and

Figure 4 is a perspective view of a conventional mould block for a form-fill-seal machine with two mould inserts according to the invention located within the mould cavity of the mould block.

DETAILED DESCRIPTION OF AN EMBODIMENT

The mould insert 10 depicted in Figure 1 comprises a generally rectangular, box-shaped body with end walls 12, side walls 14 and base 16. A mould cavity 18 is defined within the body of the insert 10.

Referring to Figure 2, the inner face of the side walls 14 is contoured into the base 16 defining fillet radii 20 in the corners of the mould cavity. Similarly, the end walls 12 are contoured into the side walls 14 with similar fillet radii and in this way no sharp corners are provided within the mould cavity.

The outer, bottom edges of the side walls 14 are truncated to form a flat edge 22 extending along the lower outer sides of the mould insert 10. Extending between this flat outer edge 22 and the fillet radii 20 within the mould cavity are vacuum ports or passages 24. As can be seen from Figure 3, these passages are provided around the entire perimeter of the base 16 of the mould insert.

In use, the mould insert 10 is inserted into a conventional mould cavity of a form-fill-seal packaging machine. The mould insert is inserted into the mould cavity together with at least one other similar mould insert as can be seen in Figure 4. It will be appreciated that the relative sizes of the mould insert and the mould cavity of the mould block may be adjusted to accommodate multiple inserts of the type described above.

A divider 26 is provided between the two mould inserts 10 depicted in Figure 4 which are located within the mould cavity of the mould block in a snug fit. Once the mould inserts are positioned in this way within the mould block the mould block is used in a conventional way for packaging with each of the mould inserts defining a separate mould cavity within the mould block.

In an alternative embodiment of the invention not depicted in the accompanying drawings, only a single mould insert is used in the mould cavity as opposed to a multiplicity of inserts.

It has been found that the use of the mould insert in preference to conventional dividers results in less creasing and folding at the corners of a pocket formed within the mould cavity and in this way reduces the percentage of leaking pockets formed by the form-fill-seal machine.

CLAIMS

1. A mould insert for a form-fill-seal packaging machine, the mould insert comprising:

   a body having a shape and configuration adapted to be received in a snug fit into a mould block of the form-fill-seal packaging machine;

   a mould cavity defined within the body; and

   vacuum passages leading through the body of the mould insert between the mould cavity and an exterior face of the body.

2. A mould insert according to claim 1, wherein the body is sized to be received into the mould block of the form-fill-seal packaging machine together with at least one other similar mould insert.

3. A mould insert according to either claim 1 or claim 2, wherein the mould cavity is defined between end faces, side walls and a base within the body.

4. A mould insert according to claim 3, wherein the base is locatable in a plurality of positions so as to allow the depth of the mould to be adjusted.

5. A mould insert according to claim 3 or claim 4, wherein the side walls and end faces of the mould cavity are contoured into the base defining fillet radii in the corners of the mould cavity.

6. A mould insert according to claim 5, wherein the vacuum passages are defined in the fillet radii of the mould insert.

7. A mould insert according to any one of the preceding claims, wherein the mould insert has generally rectangular shape.

8. A mould insert substantially as herein described with reference to the illustrated embodiment.

DATED THIS 19TH DAY OF NOVEMBER 1989

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APPLICANTS PATENT ATTORNEYS

VAN LEER SOUTH AFRICA (PTY) LTD
COMPLETE SPECIFICATION

SINGLE SHEET

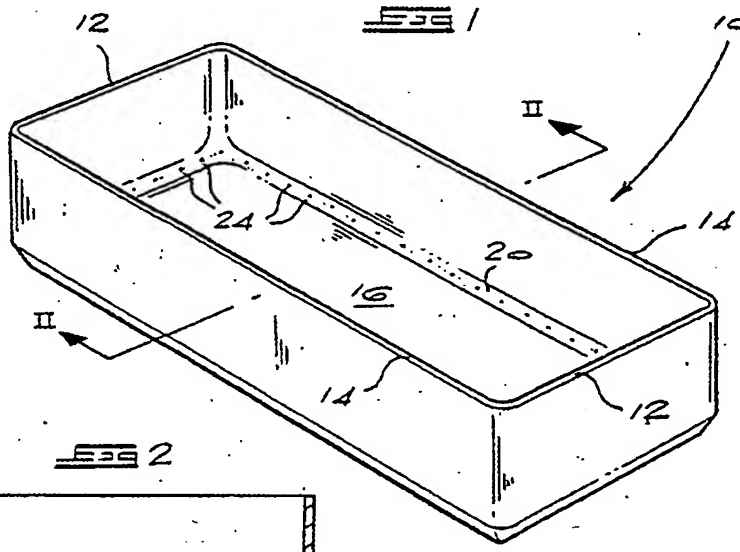

FIG 1

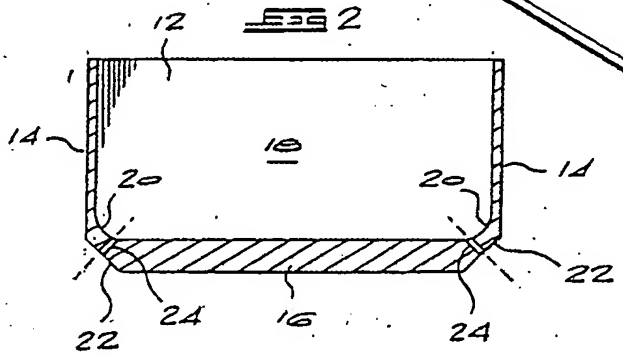

FIG 2

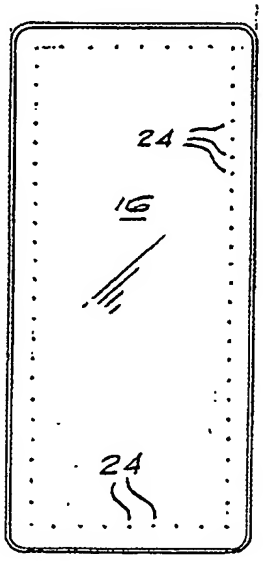

FIG 3

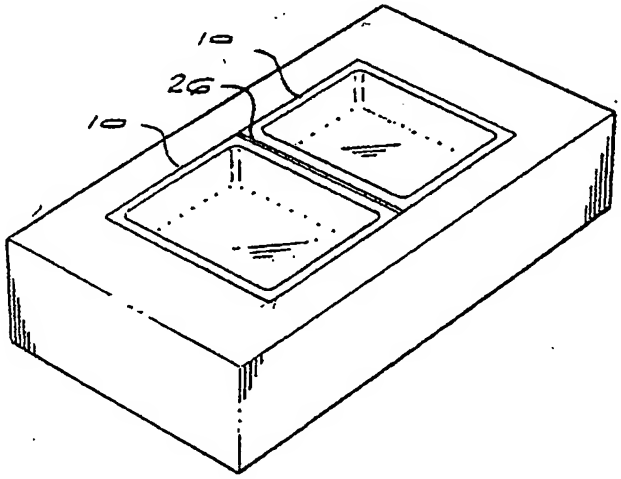

FIG 4

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